

What Is Claimed Is:

1. A proportional solenoid control valve comprising:

a solenoid;

a magnetic movable member which is applied a magnetic attraction force by the solenoid;

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a flat spring for engaging its outer periphery section with non-magnetic cylindrical member for guiding the magnetic movable member, and for engaging its inner periphery section with the magnetic movable member so as to balance in power with the magnetic movable member due to the magnetic attraction force.

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2. A proportional solenoid valve as set forth in claim 1, wherein the flat spring is a flat square spring which has cutouts at inner side of four corners thereof so as to obtain uniform deformation displacement, and which is strong and is wide in spring constant maintaining width with respect to the spring displacement, wherein the flat square spring
15 is applied low friction Teflon coating on one supporting point side face.

3. A proportional solenoid control valve as set forth in claim 1, wherein the flat spring is a circular flat spring has cutouts at four points of inner section so that the distance between the supporting points does not change even when the load has changed.

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4. A proportional solenoid control valve as set forth in claim 1, further comprising a sealing mechanism which compensates dimensional instability by combining a rubber having smaller displacement and smaller hardness and a rubber having greater hardness at a section corresponding to an orifice.